REMARKS

Claims 2, 7-11, and 26-32 are pending herein.

1. Claims 2, 7-11, and 26-32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima (2001/0006042) in view of Vaidya (US 5076203). This rejection is respectfully traversed for the following reasons.

A. Claims 2 and 7-11

Claim 2 is drawn to an IBAD apparatus for cooling and positioning a substrate during a continuous high-throughput coating deposition processes. The apparatus includes a transport system for translating a substrate along a first direction and a substrate block having both internal liquid coolant channels and internal gaseous coolant delivery channels. The gaseous coolant delivery channels are hollow along the entirety of their length. Additionally, the internal gaseous coolant delivery channels extend to respective openings at the first surface of the substrate block. The openings are equally spaced apart with respect to each other along a second direction. The second direction perpendicular to the first direction along with the substrate is translated.

The USPTO relies upon Iijima to teach aspects of claim 2. Specifically, Iijima teaches an IBAD apparatus including a transport system and a substrate block. However, as acknowledged by the USPTO, Iijima fails to teach that the substrate block includes internal gaseous coolant delivery channels.

As such, the USPTO relies upon Vaidya to allegedly teach internal gaseous coolant delivery channels. Vaidya discloses a substrate block having gas channels supplying a porous block with a gaseous coolant. The gaseous coolant flows through the porous block to the surface along which a substrate is translated. Vaidya fails to disclose or remotely suggest gas channels extending to openings equally spaced apart with respect to each other along a second direction perpendicular to the first direction, i.e., the direction of translation. Referring to present Figs. 1, 5, and 6 of Vaidya, the substrate translates along the curve of the substrate block, corresponding to translating from right to left in Figs. 7-10 Vaidya. While the gas channels 44 in Fig. 7 of Vaidya and gas channels 63 in Fig. 9 of Vaidya are spaced apart in the first direction, there is no

suggestion of additional channels spaced apart, let alone equally spaced apart, along a second direction at the first surface (i.e., in the direction perpendicular to the page). As such, Iijima and Vaidya, alone or in combination, fail to disclose internal gaseous coolant delivery channels extending to openings equally spaced apart with respect to each other along a second direction perpendicular to the first direction.

Applicants respectfully submit that the USPTO has not provided a proper factual finding that Iijima and Vaidya, individually or in combination, teach, suggest, or provide motivation to achieve the claimed apparatus including internal gaseous coolant delivery channels extending to openings at positions spaced apart from each other at the first surface of the substrate block, the openings equally spaced apart with respect to each other along a second direction perpendicular to the first direction. As such, the USPTO has failed to establish a prima facie case of obviousness with respect to claim 2. Claims 7-11 depend directly or indirectly from claim 2 and are allowable for at least the same reasons as claim 2. Therefore, Applicants respectfully request withdrawal of the 103(a) rejection over Iijima and Vaidya.

B. Claims 26-32

Claim 26 is drawn to an IBAD apparatus for cooling and positioning a substrate during a continuous high-throughput coating deposition processes. The apparatus includes a transport system for translating a substrate along a first direction and a substrate block having both internal liquid coolant channels and internal gaseous coolant delivery channels. The surface of the substrate block includes an array of orifices, the orifices being spaced apart from each other along the first direction and a second direction perpendicular to the first direction. The orifices are equally spaced apart from each other along the second direction. The gaseous coolant delivery channels extend to the array of orifices and are hollow along the entirety of their length.

As discussed above, Iijima fails to teach that the substrate block includes internal gaseous coolant delivery channels. Additionally, Iijima fails to teach an array of orifices along the surface of the substrate block. It appears to be the USPTO's position that openings of the porous material constitute orifices. However, as the interconnecting channels of the porous material would be randomly distributed, Vaidya fails to teach or suggest that the orifices are equally spaced apart from each other along the second direction. As such, Iijima and Vaidya, alone or in

combination, fail to teach an array of orifices, the orifices being equally spaced apart from each other along the second direction. As such, the USPTO has failed to establish a prima facie case of obviousness with respect to claim 26. Claims 27-32 depend directly or indirectly from claim 26 and are allowable for at least the same reasons as claim 26. Therefore, Applicants respectfully request withdrawal of the 103(a) rejection over Iijima and Vaidya.

Applicant(s) respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to telephone Applicants' undersigned representative at the number listed below.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

Respectfully submitted,

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Date

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